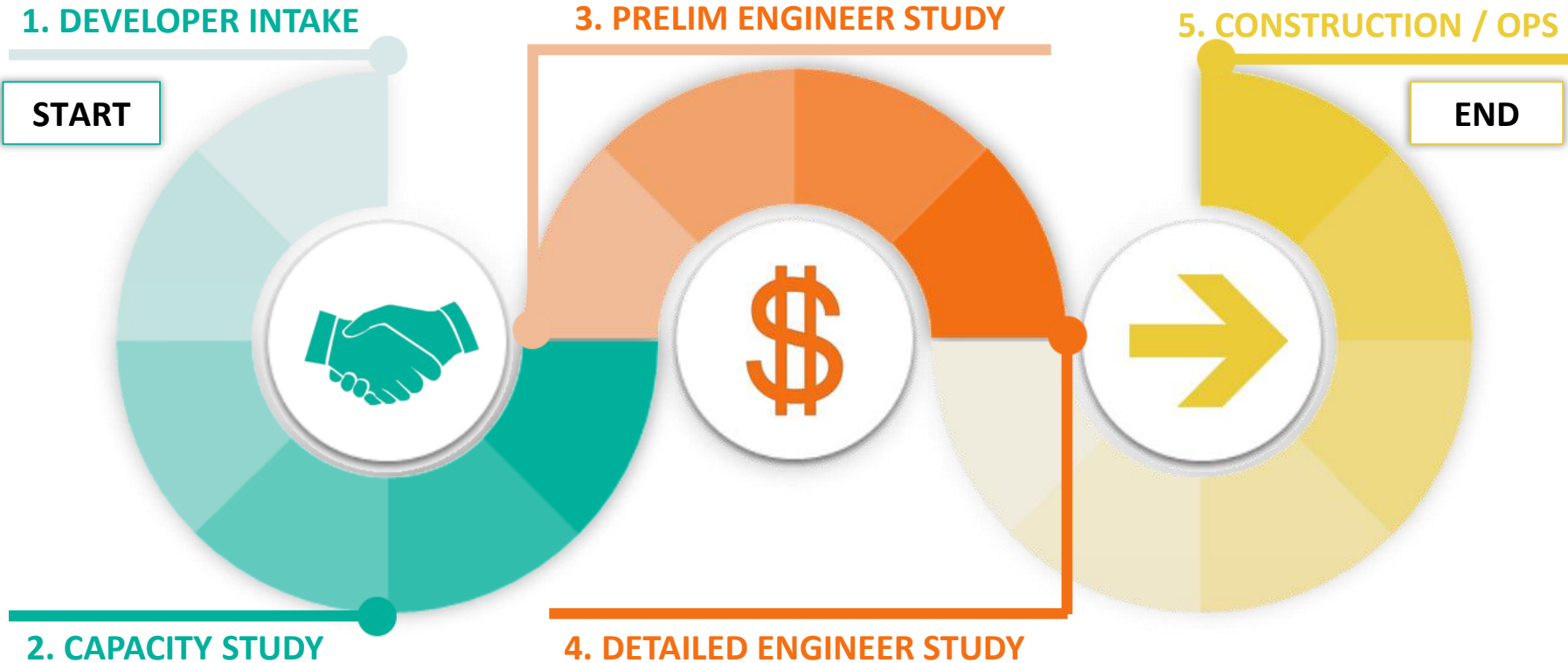


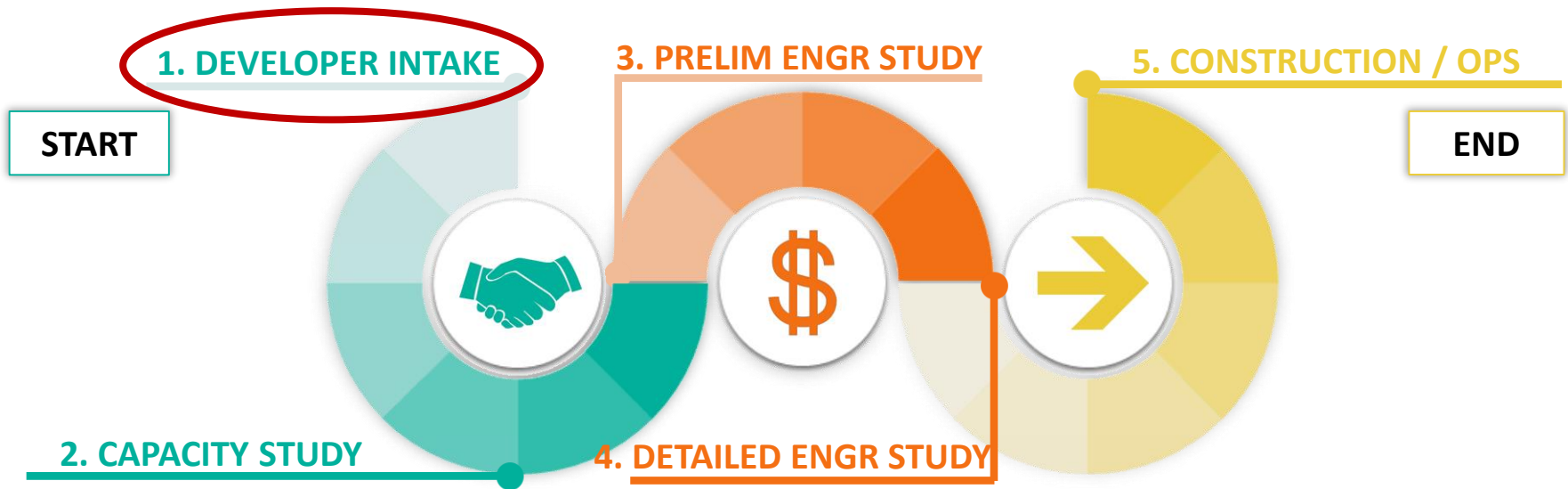
# Utility Gas Supply Interconnection

May 23, 2019



# End-to-End Interconnection Process





- Contact utility and submit interconnection request form
- Request form provides all info needed to assess project viability
- Utility determines point of injection location

## PG&E

- Website: <https://www.pge.com/biomethane>
- Email: [biomethane@pge.com](mailto:biomethane@pge.com)
- Contact: Ken Brennan, [Kenneth.Brennan@pge.com](mailto:Kenneth.Brennan@pge.com), 925-244-3542

## SoCalGas/SDG&E

- Websites: <https://www.socalgas.com/for-your-business/energy-market-services/new-or-expanded-interconnection-receipt-points> and [www.sdge.com/rng](http://www.sdge.com/rng)
- Email: [gasstudyrequests@semprautilities.com](mailto:gasstudyrequests@semprautilities.com)
- Contact: Jerry McPherson, [JMcPherson@SempraUtilities.com](mailto:JMcPherson@SempraUtilities.com), 213-244-3972

## Southwest Gas

- Website: <https://www.swgas.com/en/california-rates-and-regulation>
- Industrial Services: <https://www.swgas.com/en/industrial-services>
- Email: [KeyAccountManagement@swgas.com](mailto:KeyAccountManagement@swgas.com)
- Contact: Maria Rushing, [Maria.stosich-rushing@swgas.com](mailto:Maria.stosich-rushing@swgas.com), 702-249-4655

## PG&E

- **Interconnection Request:** Capacity Study Requests
- Gas Quality Rule: Gas Rule 21
- Reference Guide: Quick Reference Guide

## SoCalGas/SDG&E

- **Interconnection Request:** Gas Supplier Interconnection Project Fact Sheet
- Interconnection Tariff: Gas Rule 39
- Gas Quality Rule: Gas Rule 30
- Toolkit: RNG Toolkit

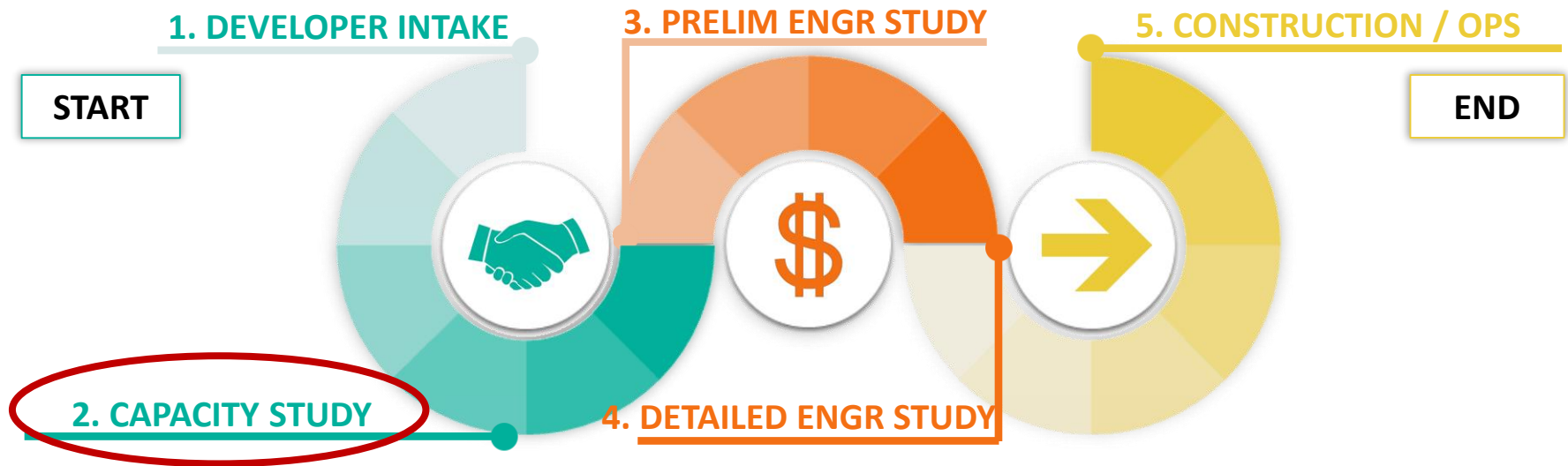
## Southwest Gas

- **Interconnection Request:** RNG Supplier Interconnect Project Fact Sheet
- Gas Quality Rule and Interconnection Tariff: Gas Rule 22

General project information necessary to investigate the viability of the project:

- Contact Information for producer and developer
- Project site location
- Desired project start date
- Forecasted operating profile (days/week, seasonality)
- Build-out volume minimum and maximum
- Source of gas supply (biogas feedstock type)
- Other questions about biogas production and processing

Questions?



What is the nearest pipeline system with sufficient takeaway capacity to receive the supplier's full build-out gas deliveries on a 24x7 basis?

What is the nearest pipeline system with sufficient takeaway capacity to receive the supplier's full build-out gas deliveries on a 24x7 basis?

Desktop planning assessment includes:

- Hourly customer demand
- Maximum and normal operating pressures
- Known large volume customer impacts
- Is the pipeline scheduled for retirement?
- Are there anticipated or possible pipeline changes?

Cost of study

- PG&E and Southwest Gas: no charge
- SoCalGas/SDG&E : minimal charge (<\$5K)

## Time required:

- PG&E: 3 weeks
- SoCalGas: 6 weeks
- Southwest Gas: 8 weeks (completed during Prelim Engineering Study)

## Deliverable:

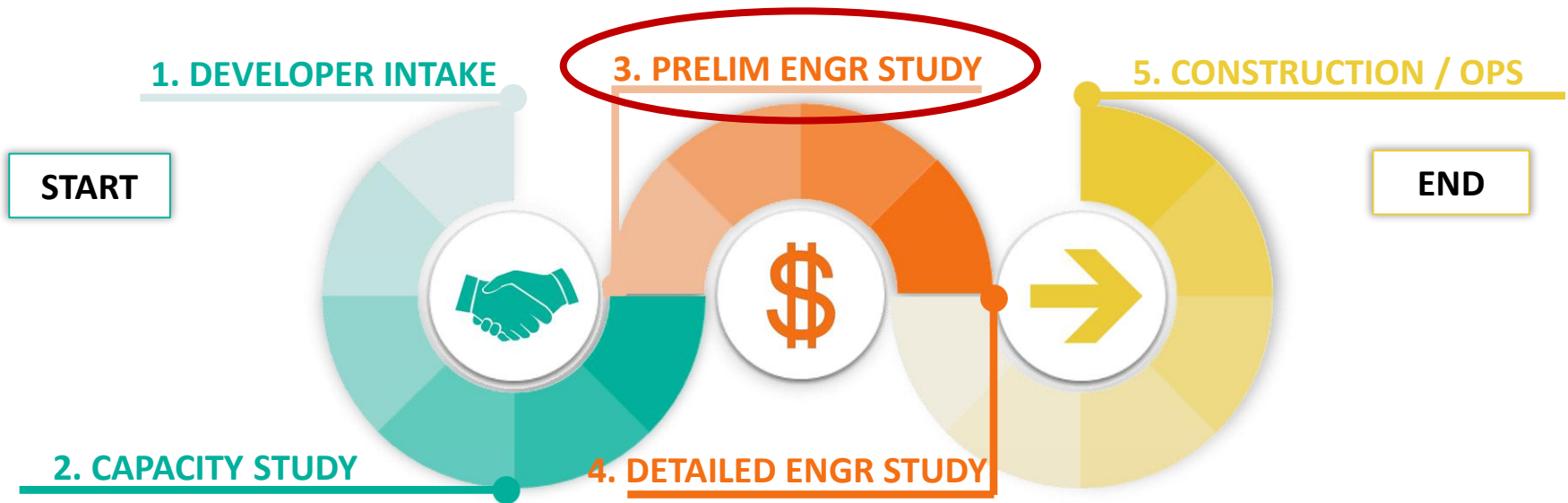
- Determine nearest pipeline with takeaway capacity
- If not closest pipe, where can the gas be injected?
- Operating pressure
- Estimated length of pipeline
- Diameter of receiving pipeline
- SoCalGas/SDG&E - estimated cost of pipeline extension

## **SoCalGas/SDG&E:**

Execute Consulting Services Agreement - Exhibit A  
Interconnect Capacity Study & Exhibit B Confidentiality  
Agreement

Questions?

# Preliminary Engineering Study Phase



- Developer and utility engineering teams discuss project design and cost estimate in order to determine economic viability.
- If viable, then continue development into detailed engineering.

## Scope

- Utility engineers and developer to discuss the project in more detail, and the utility will develop a preliminary design
- The utility will provide an initial cost estimate for the point of receipt station and any pipeline extension

## Deliverables

- Confirm results of capacity study
- Assess interchangeability of gas
- Determine BTU district work (maintain accurate customer billing)
- Provide initial cost estimates
- Preliminary design work completed
- SoCalGas/SDG&E: plot plan and environmental drawings

## Contracting

- PG&E and Southwest Gas: No contract required at this stage except for funding agreements
- SoCalGas/SDG&E: Execute Consulting Services Agreement - Exhibit A-1 Preliminary Engineering Study

## Funding

- All work performed at actual cost
- Engineering advances
  - PG&E: \$50K initial, as needed thereafter
  - SoCalGas/SDG&E: \$65K - \$75K estimate trued-up to actual
  - Southwest Gas: no supplier costs for preliminary engineering study

## Cost (depending on complexity)

- PG&E: \$50K - \$80K
- SoCalGas/SDG&E: \$65K - \$75K
- Southwest Gas: costs charged in detailed engineering design phase

Time required:

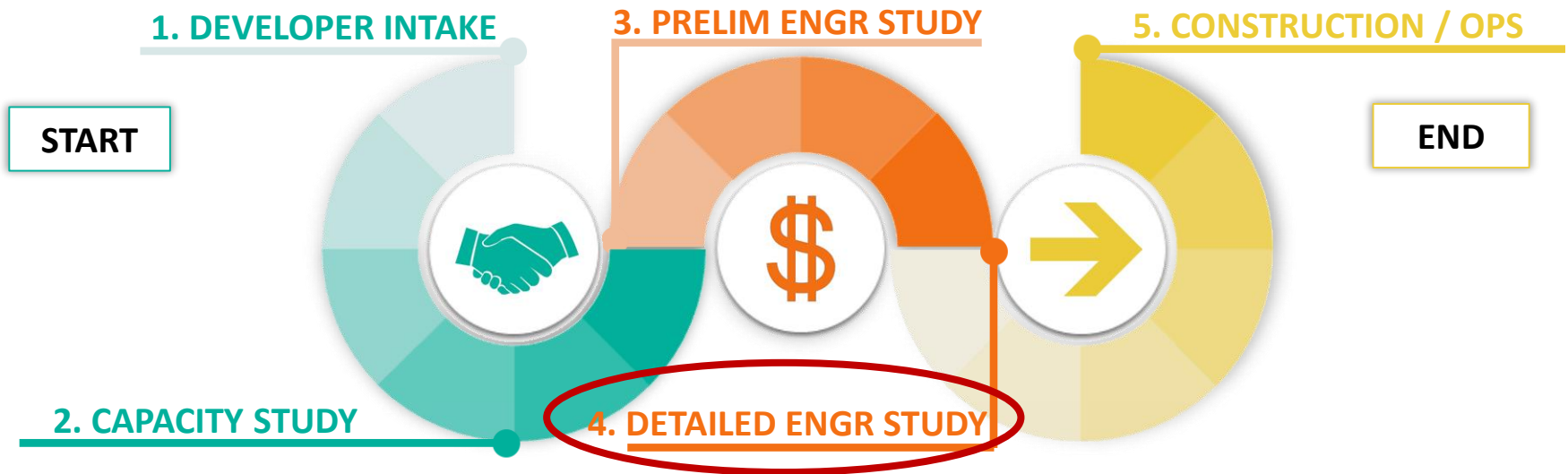
- PG&E: 4 months
- SoCalGas/SDG&E: 3 months
- Southwest Gas: 2 months (combined with Prelim Engineering Study)

Can a third party engineering firm perform station and design work under utility supervision?

- PG&E: Yes, if an approved program contractor
- SoCalGas/SDG&E: Yes, if done as part of interconnection agreements
- Southwest Gas: Yes, with prior notification and approved program contractor

Questions?

# Detailed Engineering Study Phase



Continuation of the Preliminary Engineering Study and completion of design and other work to prepare for construction

## Scope

- Complete engineering design and construction drawings
- Produce a final cost estimate of construction
- Prepare all permit applications and other documents necessary for construction

## Contracting

- PG&E: Execution of the California Biomethane Interconnection and Operating Agreement (CBIOA), continued funding agreements
- SoCalGas/SDG&E: Execute the Consulting Services Agreement - Exhibit A-2 Detailed Engineering Study or Exhibit A-3 for ordering long lead time equipment
- Southwest Gas: Letter Agreement for Renewable Natural Gas Detailed Engineering Study

Cost (depending on complexity)

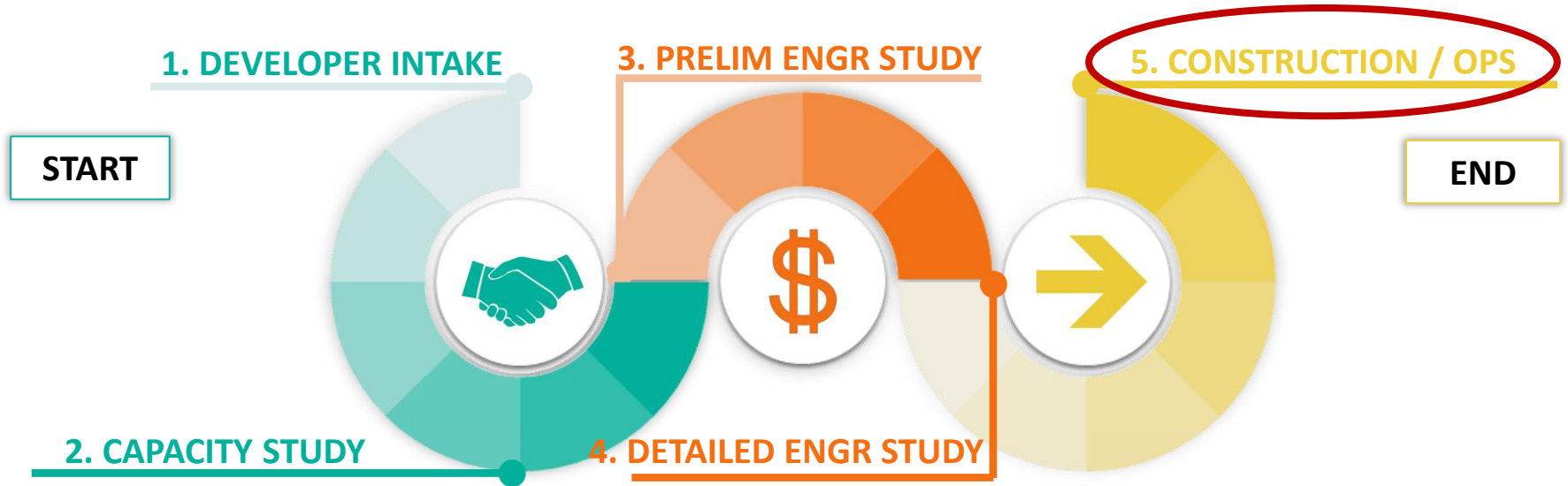
- PG&E: \$350K - \$600K
- SoCalGas/SDG&E: \$325K - \$600K
- Southwest Gas: \$50K - \$150K

Time required:

- PG&E: 5 months
- SoCalGas/SDG&E: 5 months
- Southwest Gas: 6 months

Questions?

# Construction and Release to Operations



Project is constructed and is commissioned into service

## Contracting

- PG&E: Construction terms are contained in the CBIOA
- SoCalGas/SDG&E: Execute the California Production Interconnection Agreement
- Southwest Gas: Construction and Interconnection Agreement; Gas Purchasing Agreement

## Cost

- Balance of final cost estimate due prior to construction
- Actual costs are trued-up upon completion of all related project work

Time to construct point of receipt station

- PG&E: 3 months
- SoCalGas/SDG&E: 3 months
- Southwest Gas: 3 - 6 months
- Construction of pipeline extension depends on length of pipe, terrain, environmental, etc.

Commissioning (Release to Operations)

- Testing and verification that all facilities are operational and safe
- Gas quality testing protocols per tariffs

Can the facilities be constructed by a third party contractor?

- PG&E: The contractor and material vendors must be pre-approved, and standardized PG&E designs must be used.
- SoCalGas/SDG&E: Yes, pursuant to CPICSUA Self-build provisions and California Producer Agreement to Transfer Ownership
- Southwest Gas: Yes. The contractor and materials vendors must be pre-approved, and Southwest Gas design standards must be used.

# Construction - Estimated Project Timeline

Process Step	Estimated Time in Weeks		
	PG&E	SoCalGas/ SDG&E	Southwest Gas
Intake Process	2	2	2
Capacity Study	3	3	8
Preliminary Engineering	16	12	8
Detailed Engineering	20	20	24
<b>Total Assess and Design</b>	<b>41</b>	<b>37</b>	<b>42</b>
Construction of POR	12	12	24
Total Development Weeks	53	49	66
<b>Total Development Months</b>	<b>13</b>	<b>14</b>	<b>17</b>

# Construction - Estimated Project Costs

	Estimated Cost		
Process Step	PG&E	SoCalGas/ SDG&E	Southwest Gas
Intake Process	\$0	\$0	\$0
Capacity Study	\$0	\$2K - \$5K	\$0
Preliminary Engineering	\$50K - \$80K	\$65K - \$75K	\$0
Detailed Engineering	\$350K - \$600K	\$325K - \$600K	\$50K - \$150K
<b>Total Assess and Design</b>	<b>\$400K - \$680K</b>	<b>\$392K - \$680K</b>	<b>\$50K - \$150K</b>
Material, Construction and Release/Close-out	\$720K - \$1000K	\$1700K - \$2000K	\$700K - \$2000K
<b>Total Costs</b>	<b>\$1120K to \$1680K</b>	<b>\$2092K to \$2680K</b>	<b>\$750K - \$2150K</b>

Questions?

**Thank You!!**